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bcc:
Subject: Environmental Defense comments on Glyphosate Intermediate (CAS# 5994-61-6)

(Submitted via Internet 3/1/05 to oppt.ncic@epa.gov, hpv.chemrtk@epa.gov, boswell.karen@epa.gov, chem.rtk@epa.gov, lucierg@msn.com and Clyde.l.livingston@monsanto.com)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for **Glyphosate Intermediate (CAS# 5994-61-6)**.

The test plan and robust summaries for glyphosate intermediate (GI) were submitted by Monsanto Company. According to the test plan, GI is used exclusively as the final intermediate in the manufacturing process of glyphosate, the active ingredient in the widely-used herbicide Round-Up. No other uses of GI are indicated, although it is shipped to multiple sites for manufacturing glyphosate.

The test plan provides helpful information on industrial hygiene practices for minimizing worker exposure. However, no monitoring data are provided on environmental sampling around GI manufacturing sites. Although monitoring data are not required by the HPV program, such information is helpful for assessing environmental concerns for a substance that has well-documented herbicidal properties.

The test plan proposes to use surrogate data from glyphosate to meet requirements for three endpoints: vapor pressure, photolysis and stability in water. The sponsor contends that existing data on GI and the use of the surrogate data are sufficient to satisfy all SIDS endpoints. We agree with this contention with the exceptions of water stability and photolysis. Although GI has two carboxymethyl moieties instead of the one present in glyphosate, the two chemicals might be assumed to have similar toxicological properties. However, the presence of the second carboxymethyl group confers a substantial increase in toxicity to aquatic plants; the robust summaries report that the EC50 for GI is 140 mg/l, compared to 2 mg/l for glyphosate. Therefore, it is important to have information on photolysis and water stability for GI to determine if glyphosate or other products are formed that would increase the aquatic toxicity of GI.

Does the sponsor have information on the mechanism responsible for the influence of the number of carboxymethyl moieties on aquatic toxicity? Also, we request that the sponsor provide additional supporting information for the statement at the end of page 16, "*GI is readily converted to glyphosate by other chemical processes*" .

Other comments are as follows:

1. The test plan states that glyphosate and GI have a common mode of action. What is the mode of action? If it is not known, then this statement should be deleted.
2. The repeat dose study was conducted using the dermal route of application. How much GI is absorbed into systemic circulation and is this amount adequate for assessing effects when exposure occurs via the oral route? This question is partially addressed in the reproductive and developmental studies, which were conducted using inhalation and oral exposures, respectively, and seem to indicate a low order of chronic toxicity. The reproductive study included a 13-week exposure period. Were other tissues, in addition to the reproductive tracts, examined for histological lesions? If so, the reproductive study could also be used to satisfy the repeat dose endpoint.
3. The robust summaries state that the pulmonary lesions observed in the inhalation study were not considered to represent systemic toxic effects resulting from absorption of the test material. This does not change the fact that the lesions were caused by GI.

Thank you for this opportunity to comment.

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